eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

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City & County of Honolulu
630 South Beretania Street
Public Service Bldg. Room 310
Honolulu, Hawaii 96843

Generated 11/11/2026 11:53:58 AM

JOB DESCRIPTION

RED-HILL
PFAS: Halawa Shaft Viewing Pool

JOB NUMBER

380-246827-1

Eurofins Pomona
941 Corporate Center Drive
Pomona CA 91768-2642

See page two for job notes and contact information.

myEOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Drinking Water and Wastewater West, LLC Project Manager.

Compliance Statement

1. Laboratory is accredited in accordance with TNI 2016 Standards and ISO/IEC 17025:2017.
2. Laboratory certifies that the test results meet all TNI 2016 and ISO/IEC 17025:2017 requirements unless noted under the individual analysis
3. Test results relate only to the sample(s) tested.
4. This report shall not be reproduced except in full, without the written approval of the laboratory.
5. Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below. (DW,Water matrices)

Authorization



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Authorized for release by
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Definitions/Glossary

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-246827-1
SDG: PFAS: Halawa Shaft Viewing Pool

Qualifiers

LCMS

Qualifier	Qualifier Description
*5-	Isotope dilution analyte is outside acceptance limits, low biased.
E	Result exceeded calibration range.
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job Narrative
380-246827-1

The analytical test results presented in this report meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page, unless otherwise noted. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable. Regulated compliance samples (e.g. SDWA, NPDES) must comply with associated agency requirements/permits.

- Matrix-specific batch QC (e.g., MS, MSD, SD) may not be reported when insufficient sample volume is available or when site-specific QC samples are not submitted. In such cases, a Laboratory Control Sample Duplicate (LCSD) may be analyzed to provide precision data for the batch.
- For samples analyzed using surrogate and/or isotope dilution analytes, any recoveries falling outside of established acceptance criteria are re-prepared and/or re-analyzed to confirm results, unless the deviation is due to sample dilution or otherwise explained in the case narrative.

Receipt
The samples were received on 11/6/2026 10:15 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.1°C.

PFAS
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-246827-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL — Lab Sample ID: 380-246827-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	3.2		2.0		ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.3		2.0		ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.6		2.0		ng/L	1		EPA 537.1 V2	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.5		2.0		ng/L	1		EPA 537.1 V2	Total/NA

Client Sample ID: FB HALAWA SHAFT VIEWING POOL — Lab Sample ID: 380-246827-2

No Detections.

This Detection Summary does not include radiochemical test results.

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-246827-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL
Date Collected: 11/04/26 10:30
Date Received: 11/06/26 10:15

Lab Sample ID: 380-246827-1
Matrix: Water

Method: EPA 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:28	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:28	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:28	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:28	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:28	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:28	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:28	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:28	1
Perfluorohexanesulfonic acid (PFHxS)	**3.2**		2.0		ng/L		11/09/26 15:00	11/10/26 16:28	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:28	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:28	1
Perfluorooctanesulfonic acid (PFOS)	**3.3**		2.0		ng/L		11/09/26 15:00	11/10/26 16:28	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:28	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:28	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:28	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:28	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:28	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:28	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:28	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:28	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:28	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:28	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:28	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:28	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:28	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*71*		*50 - 200*	*11/09/26 15:00*	*11/10/26 16:28*	*1*
13C6 PFDA	*82*		*50 - 200*	*11/09/26 15:00*	*11/10/26 16:28*	*1*
13C5 PFHxA	*79*		*50 - 200*	*11/09/26 15:00*	*11/10/26 16:28*	*1*
13C4 PFHpA	*80*		*50 - 200*	*11/09/26 15:00*	*11/10/26 16:28*	*1*
13C8 PFOA	*87*		*50 - 200*	*11/09/26 15:00*	*11/10/26 16:28*	*1*
13C9 PFNA	*82*		*50 - 200*	*11/09/26 15:00*	*11/10/26 16:28*	*1*
13C7 PFUnA	*86*		*50 - 200*	*11/09/26 15:00*	*11/10/26 16:28*	*1*
13C2 PFDoA	*84*		*50 - 200*	*11/09/26 15:00*	*11/10/26 16:28*	*1*
13C4 PFBA	*88*		*50 - 200*	*11/09/26 15:00*	*11/10/26 16:28*	*1*
13C5 PFPeA	*90*		*50 - 200*	*11/09/26 15:00*	*11/10/26 16:28*	*1*
13C3 PFBS	*106*		*50 - 200*	*11/09/26 15:00*	*11/10/26 16:28*	*1*
13C3 PFHxS	*109*		*50 - 200*	*11/09/26 15:00*	*11/10/26 16:28*	*1*

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-246827-1

Date Collected: 11/04/26 10:30
Matrix: Water
Date Received: 11/06/26 10:15

Method: EPA 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	104		50 - 200	11/09/26 15:00	11/10/26 16:28	1
13C2-4:2-FTS	119		50 - 200	11/09/26 15:00	11/10/26 16:28	1
13C2-6:2-FTS	116		50 - 200	11/09/26 15:00	11/10/26 16:28	1
13C2-8:2-FTS	112		50 - 200	11/09/26 15:00	11/10/26 16:28	1

Method: EPA 537.1 V2 - EPA 537.1 Ver. 2.0 March 2020

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		11/08/26 10:24	11/09/26 18:54	1
Perfluorooctanesulfonic acid (PFOS)	**3.6**		2.0		ng/L		11/08/26 10:24	11/09/26 18:54	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		11/08/26 10:24	11/09/26 18:54	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		11/08/26 10:24	11/09/26 18:54	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		11/08/26 10:24	11/09/26 18:54	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		11/08/26 10:24	11/09/26 18:54	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		11/08/26 10:24	11/09/26 18:54	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		11/08/26 10:24	11/09/26 18:54	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		11/08/26 10:24	11/09/26 18:54	1
Perfluorohexanesulfonic acid (PFHxS)	**3.5**		2.0		ng/L		11/08/26 10:24	11/09/26 18:54	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		11/08/26 10:24	11/09/26 18:54	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		11/08/26 10:24	11/09/26 18:54	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		11/08/26 10:24	11/09/26 18:54	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		11/08/26 10:24	11/09/26 18:54	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		11/08/26 10:24	11/09/26 18:54	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		11/08/26 10:24	11/09/26 18:54	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		11/08/26 10:24	11/09/26 18:54	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		11/08/26 10:24	11/09/26 18:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	100		70 - 130	11/08/26 10:24	11/09/26 18:54	1
13C2 PFHxA	103		70 - 130	11/08/26 10:24	11/09/26 18:54	1
13C2 PFDA	106		70 - 130	11/08/26 10:24	11/09/26 18:54	1
13C3-GenX	101		70 - 130	11/08/26 10:24	11/09/26 18:54	1

Client Sample ID: FB HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-246827-2

Date Collected: 11/04/26 10:30
Matrix: Water
Date Received: 11/06/26 10:15

Method: EPA 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:37	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:37	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:37	1

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-246827-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: FB HALAWA SHAFT VIEWING POOL
Date Collected: 11/04/26 10:30
Date Received: 11/06/26 10:15

Lab Sample ID: 380-246827-2
Matrix: Water

Method: EPA 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:37	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:37	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:37	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:37	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:37	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:37	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:37	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:37	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:37	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:37	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:37	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:37	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:37	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:37	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:37	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:37	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:37	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:37	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:37	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:37	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:37	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		11/09/26 15:00	11/10/26 16:37	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*99*		*50 - 200*	*11/09/26 15:00*	*11/10/26 16:37*	*1*
13C6 PFDA	*98*		*50 - 200*	*11/09/26 15:00*	*11/10/26 16:37*	*1*
13C5 PFHxA	*103*		*50 - 200*	*11/09/26 15:00*	*11/10/26 16:37*	*1*
13C4 PFHpA	*107*		*50 - 200*	*11/09/26 15:00*	*11/10/26 16:37*	*1*
13C8 PFOA	*109*		*50 - 200*	*11/09/26 15:00*	*11/10/26 16:37*	*1*
13C9 PFNA	*110*		*50 - 200*	*11/09/26 15:00*	*11/10/26 16:37*	*1*
13C7 PFUnA	*102*		*50 - 200*	*11/09/26 15:00*	*11/10/26 16:37*	*1*
13C2 PFDoA	*89*		*50 - 200*	*11/09/26 15:00*	*11/10/26 16:37*	*1*
13C4 PFBA	*107*		*50 - 200*	*11/09/26 15:00*	*11/10/26 16:37*	*1*
13C5 PFPeA	*107*		*50 - 200*	*11/09/26 15:00*	*11/10/26 16:37*	*1*
13C3 PFBS	*108*		*50 - 200*	*11/09/26 15:00*	*11/10/26 16:37*	*1*
13C3 PFHxS	*110*		*50 - 200*	*11/09/26 15:00*	*11/10/26 16:37*	*1*
13C8 PFOS	*104*		*50 - 200*	*11/09/26 15:00*	*11/10/26 16:37*	*1*
13C2-4:2-FTS	*114*		*50 - 200*	*11/09/26 15:00*	*11/10/26 16:37*	*1*
13C2-6:2-FTS	*114*		*50 - 200*	*11/09/26 15:00*	*11/10/26 16:37*	*1*
13C2-8:2-FTS	*107*		*50 - 200*	*11/09/26 15:00*	*11/10/26 16:37*	*1*

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-246827-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: FB HALAWA SHAFT VIEWING POOL

Date Collected: 11/04/26 10:30
Date Received: 11/06/26 10:15

Lab Sample ID: 380-246827-2

Matrix: Water

Method: EPA 537.1 V2 - EPA 537.1 Ver. 2.0 March 2020

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		11/08/26 10:24	11/09/26 19:04	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		11/08/26 10:24	11/09/26 19:04	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		11/08/26 10:24	11/09/26 19:04	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		11/08/26 10:24	11/09/26 19:04	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		11/08/26 10:24	11/09/26 19:04	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		11/08/26 10:24	11/09/26 19:04	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		11/08/26 10:24	11/09/26 19:04	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		11/08/26 10:24	11/09/26 19:04	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		11/08/26 10:24	11/09/26 19:04	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		11/08/26 10:24	11/09/26 19:04	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		11/08/26 10:24	11/09/26 19:04	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		11/08/26 10:24	11/09/26 19:04	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		11/08/26 10:24	11/09/26 19:04	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		11/08/26 10:24	11/09/26 19:04	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		11/08/26 10:24	11/09/26 19:04	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		11/08/26 10:24	11/09/26 19:04	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		11/08/26 10:24	11/09/26 19:04	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		11/08/26 10:24	11/09/26 19:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*102*		*70 - 130*	*11/08/26 10:24*	*11/09/26 19:04*	*1*
13C2 PFHxA	*101*		*70 - 130*	*11/08/26 10:24*	*11/09/26 19:04*	*1*
13C2 PFDA	*109*		*70 - 130*	*11/08/26 10:24*	*11/09/26 19:04*	*1*
13C3-GenX	*97*		*70 - 130*	*11/08/26 10:24*	*11/09/26 19:04*	*1*

Action Limit Summary

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-246827-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL — Lab Sample ID: 380-246827-1

Compliance Check

The results obtained from the analytical testing of this data set were checked against compliance limits received from the client. Any results at or above the compliance limits have been highlighted for your convenience.

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.2		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.3		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	533	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	EPA 537.1 V2	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.6		ng/L	4	2.0	EPA 537.1 V2	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	EPA 537.1 V2	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.5		ng/L	10	2.0	EPA 537.1 V2	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	EPA 537.1 V2	Total/NA

Client Sample ID: FB HALAWA SHAFT VIEWING POOL — Lab Sample ID: 380-246827-2

Compliance Check

The results obtained from the analytical testing of this data set were checked against compliance limits received from the client. Any results at or above the compliance limits have been highlighted for your convenience.

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	533	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	EPA 537.1 V2	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	EPA 537.1 V2	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	EPA 537.1 V2	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	EPA 537.1 V2	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	EPA 537.1 V2	Total/NA

Surrogate Summary

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-246827-1
SDG: PFAS: Halawa Shaft Viewing Pool

Method: EPA 537.1 V2 - EPA 537.1 Ver. 2.0 March 2020

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		d5NEFOS	PFHxA	PFDA	GenX
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)	(70-130)
380-246827-1	HALAWA SHAFT VIEWING POOL	100	103	106	101
380-246827-2	FB HALAWA SHAFT VIEWING POOL	102	101	109	97
380-246832-A-1-B MS	Matrix Spike	105	101	102	96
380-246832-A-1-C MSD	Matrix Spike Duplicate	100	100	99	99
LCS 380-264243/24-A	Lab Control Sample	98	99	105	93
MBL 380-264243/22-A	Method Blank	105	106	108	104
MRL 380-264243/23-A	Lab Control Sample	101	97	103	94

Surrogate Legend

d5NEFOS = d5-NEtFOSAA
PFHxA = 13C2 PFHxA
PFDA = 13C2 PFDA
GenX = 13C3-GenX

Isotope Dilution Summary

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-246827-1
SDG: PFAS: Halawa Shaft Viewing Pool

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		HFPODA	C6PFDA	13C5PHA	C4PFHA	C8PFOA	C9PFNA	13C7PUA	PFDoA
Lab Sample ID	Client Sample ID	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)
380-246492-C-7-A MS	Matrix Spike	65	79	73	71	72	72	85	101
380-246492-D-7-A MSD	Matrix Spike Duplicate	46 *5-	18 *5-	50	46 *5-	41 *5-	33 *5-	12 *5-	14 *5-
380-246827-1	HALAWA SHAFT VIEWING POOL	71	82	79	80	87	82	86	84
380-246827-2	FB HALAWA SHAFT VIEWING POOL	99	98	103	107	109	110	102	89
LCS 380-264404/22-A	Lab Control Sample	104	102	110	101	103	100	104	106
MBL 380-264404/20-A	Method Blank	98	108	107	108	114	108	107	111
MRL 380-264404/21-A	Lab Control Sample	105	110	113	115	115	109	113	109

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA	PFPeA	C3PFBS	C3PFHS	C8PFOS	42FTS	62FTS	82FTS
Lab Sample ID	Client Sample ID	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)
380-246492-C-7-A MS	Matrix Spike	71	71	107	107	104	114	114	113
380-246492-D-7-A MSD	Matrix Spike Duplicate	51	50	107	110	106	112	112	117
380-246827-1	HALAWA SHAFT VIEWING POOL	88	90	106	109	104	119	116	112
380-246827-2	FB HALAWA SHAFT VIEWING POOL	107	107	108	110	104	114	114	107
LCS 380-264404/22-A	Lab Control Sample	107	106	109	107	108	111	113	109
MBL 380-264404/20-A	Method Blank	108	107	106	106	107	110	108	110
MRL 380-264404/21-A	Lab Control Sample	110	111	109	110	107	115	114	109

Surrogate Legend

HFPODA = 13C3 HFPO-DA
C6PFDA = 13C6 PFDA
13C5PHA = 13C5 PFHxA
C4PFHA = 13C4 PFHpA
C8PFOA = 13C8 PFOA
C9PFNA = 13C9 PFNA
13C7PUA = 13C7 PFUnA
PFDoA = 13C2 PFDoA
PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
C3PFBS = 13C3 PFBS
C3PFHS = 13C3 PFHxS
C8PFOS = 13C8 PFOS
42FTS = 13C2-4:2-FTS
62FTS = 13C2-6:2-FTS
82FTS = 13C2-8:2-FTS

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water

Lab Sample ID: MBL 380-264404/20-A
Matrix: Water
Analysis Batch: 264628

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 264404

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.29		2.0		ng/L		11/09/26 15:00	11/10/26 13:26	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0		ng/L		11/09/26 15:00	11/10/26 13:26	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.59		2.0		ng/L		11/09/26 15:00	11/10/26 13:26	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<0.98		2.0		ng/L		11/09/26 15:00	11/10/26 13:26	1
Perfluorobutanesulfonic acid (PFBS)	<0.36		2.0		ng/L		11/09/26 15:00	11/10/26 13:26	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0		ng/L		11/09/26 15:00	11/10/26 13:26	1
Perfluorododecanoic acid (PFDoA)	<0.53		2.0		ng/L		11/09/26 15:00	11/10/26 13:26	1
Perfluoroheptanoic acid (PFHpA)	<0.38		2.0		ng/L		11/09/26 15:00	11/10/26 13:26	1
Perfluorohexanesulfonic acid (PFHxS)	0.322	J	2.0		ng/L		11/09/26 15:00	11/10/26 13:26	1
Perfluorohexanoic acid (PFHxA)	<0.45		2.0		ng/L		11/09/26 15:00	11/10/26 13:26	1
Perfluorononanoic acid (PFNA)	<0.39		2.0		ng/L		11/09/26 15:00	11/10/26 13:26	1
Perfluorooctanesulfonic acid (PFOS)	<0.42		2.0		ng/L		11/09/26 15:00	11/10/26 13:26	1
Perfluorooctanoic acid (PFOA)	<0.37		2.0		ng/L		11/09/26 15:00	11/10/26 13:26	1
Perfluoroundecanoic acid (PFUnA)	<0.41		2.0		ng/L		11/09/26 15:00	11/10/26 13:26	1
Perfluorobutanoic acid (PFBA)	<0.68		2.0		ng/L		11/09/26 15:00	11/10/26 13:26	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0		ng/L		11/09/26 15:00	11/10/26 13:26	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.36		2.0		ng/L		11/09/26 15:00	11/10/26 13:26	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.47		2.0		ng/L		11/09/26 15:00	11/10/26 13:26	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.46		2.0		ng/L		11/09/26 15:00	11/10/26 13:26	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.24		2.0		ng/L		11/09/26 15:00	11/10/26 13:26	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.45		2.0		ng/L		11/09/26 15:00	11/10/26 13:26	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0		ng/L		11/09/26 15:00	11/10/26 13:26	1
Perfluoropentanoic acid (PFPeA)	<0.37		2.0		ng/L		11/09/26 15:00	11/10/26 13:26	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.35		2.0		ng/L		11/09/26 15:00	11/10/26 13:26	1
Perfluoropentanesulfonic acid (PFPeS)	<0.38		2.0		ng/L		11/09/26 15:00	11/10/26 13:26	1

Isotope Dilution	*MBL %Recovery*	*MBL Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*98*		*50 - 200*	*11/09/26 15:00*	*11/10/26 13:26*	*1*
13C6 PFDA	*108*		*50 - 200*	*11/09/26 15:00*	*11/10/26 13:26*	*1*
13C5 PFHxA	*107*		*50 - 200*	*11/09/26 15:00*	*11/10/26 13:26*	*1*
13C4 PFHpA	*108*		*50 - 200*	*11/09/26 15:00*	*11/10/26 13:26*	*1*
13C8 PFOA	*114*		*50 - 200*	*11/09/26 15:00*	*11/10/26 13:26*	*1*
13C9 PFNA	*108*		*50 - 200*	*11/09/26 15:00*	*11/10/26 13:26*	*1*
13C7 PFUnA	*107*		*50 - 200*	*11/09/26 15:00*	*11/10/26 13:26*	*1*
13C2 PFDoA	*111*		*50 - 200*	*11/09/26 15:00*	*11/10/26 13:26*	*1*
13C4 PFBA	*108*		*50 - 200*	*11/09/26 15:00*	*11/10/26 13:26*	*1*
13C5 PFPeA	*107*		*50 - 200*	*11/09/26 15:00*	*11/10/26 13:26*	*1*
13C3 PFBS	*106*		*50 - 200*	*11/09/26 15:00*	*11/10/26 13:26*	*1*
13C3 PFHxS	*106*		*50 - 200*	*11/09/26 15:00*	*11/10/26 13:26*	*1*

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Lab Sample ID: MBL 380-264404/20-A
Matrix: Water
Analysis Batch: 264628

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 264404

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	107		50 - 200	11/09/26 15:00	11/10/26 13:26	1
13C2-4:2-FTS	110		50 - 200	11/09/26 15:00	11/10/26 13:26	1
13C2-6:2-FTS	108		50 - 200	11/09/26 15:00	11/10/26 13:26	1
13C2-8:2-FTS	110		50 - 200	11/09/26 15:00	11/10/26 13:26	1

Lab Sample ID: LCS 380-264404/22-A
Matrix: Water
Analysis Batch: 264628

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 264404

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	118	107		ng/L		90	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	118	106		ng/L		90	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	118	115		ng/L		97	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	118	107		ng/L		91	70 - 130
Perfluorobutanesulfonic acid (PFBS)	118	110		ng/L		93	70 - 130
Perfluorodecanoic acid (PFDA)	118	112		ng/L		95	70 - 130
Perfluorododecanoic acid (PFDoA)	118	108		ng/L		91	70 - 130
Perfluoroheptanoic acid (PFHpA)	118	110		ng/L		94	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	118	109		ng/L		92	70 - 130
Perfluorohexanoic acid (PFHxA)	118	107		ng/L		90	70 - 130
Perfluorononanoic acid (PFNA)	118	122		ng/L		103	70 - 130
Perfluorooctanesulfonic acid (PFOS)	118	109		ng/L		92	70 - 130
Perfluorooctanoic acid (PFOA)	118	116		ng/L		98	70 - 130
Perfluoroundecanoic acid (PFUnA)	118	121		ng/L		102	70 - 130
Perfluorobutanoic acid (PFBA)	118	109		ng/L		93	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	118	109		ng/L		93	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	118	111		ng/L		94	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	118	110		ng/L		93	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	118	115		ng/L		98	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	118	104		ng/L		88	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	118	112		ng/L		95	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	118	111		ng/L		94	70 - 130
Perfluoropentanoic acid (PFPeA)	118	112		ng/L		95	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	118	108		ng/L		92	70 - 130

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Lab Sample ID: LCS 380-264404/22-A
Matrix: Water
Analysis Batch: 264628

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 264404

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Perfluoropentanesulfonic acid (PFPeS)			118	112		ng/L		94	70 - 130		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C3 HFPO-DA	*104*		*50 - 200*
13C6 PFDA	*102*		*50 - 200*
13C5 PFHxA	*110*		*50 - 200*
13C4 PFHpA	*101*		*50 - 200*
13C8 PFOA	*103*		*50 - 200*
13C9 PFNA	*100*		*50 - 200*
13C7 PFUnA	*104*		*50 - 200*
13C2 PFDoA	*106*		*50 - 200*
13C4 PFBA	*107*		*50 - 200*
13C5 PFPeA	*106*		*50 - 200*
13C3 PFBS	*109*		*50 - 200*
13C3 PFHxS	*107*		*50 - 200*
13C8 PFOS	*108*		*50 - 200*
13C2-4:2-FTS	*111*		*50 - 200*
13C2-6:2-FTS	*113*		*50 - 200*
13C2-8:2-FTS	*109*		*50 - 200*

Lab Sample ID: MRL 380-264404/21-A
Matrix: Water
Analysis Batch: 264628

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 264404

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)			1.97	1.75	J	ng/L		89	50 - 150		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)			1.97	1.74	J	ng/L		88	50 - 150		
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)			1.97	1.84	J	ng/L		93	50 - 150		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)			1.97	1.82	J	ng/L		93	50 - 150		
Perfluorobutanesulfonic acid (PFBS)			1.97	1.73	J	ng/L		88	50 - 150		
Perfluorodecanoic acid (PFDA)			1.97	1.96	J	ng/L		100	50 - 150		
Perfluorododecanoic acid (PFDoA)			1.97	1.90	J	ng/L		97	50 - 150		
Perfluoroheptanoic acid (PFHpA)			1.97	1.88	J	ng/L		95	50 - 150		
Perfluorohexanesulfonic acid (PFHxS)			1.97	1.92	J	ng/L		97	50 - 150		
Perfluorohexanoic acid (PFHxA)			1.97	1.87	J	ng/L		95	50 - 150		
Perfluorononanoic acid (PFNA)			1.97	2.08	J	ng/L		106	50 - 150		
Perfluorooctanesulfonic acid (PFOS)			1.97	2.03	J	ng/L		103	50 - 150		
Perfluorooctanoic acid (PFOA)			1.97	2.09	J	ng/L		106	50 - 150		
Perfluoroundecanoic acid (PFUnA)			1.97	1.80	J	ng/L		91	50 - 150		
Perfluorobutanoic acid (PFBA)			1.97	1.94	J	ng/L		98	50 - 150		

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Lab Sample ID: MRL 380-264404/21-A
Matrix: Water
Analysis Batch: 264628

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 264404

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	1.97	1.70	J	ng/L		86	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	1.97	1.93	J	ng/L		98	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	1.97	1.88	J	ng/L		95	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	1.97	2.43	J	ng/L		124	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	1.97	1.65	J	ng/L		84	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	1.97	1.79	J	ng/L		91	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	1.97	1.76	J	ng/L		90	50 - 150
Perfluoropentanoic acid (PFPeA)	1.97	1.89	J	ng/L		96	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	1.97	1.89	J	ng/L		96	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	1.97	1.72	J	ng/L		88	50 - 150

Isotope Dilution	*MRL %Recovery*	*MRL Qualifier*	*Limits*
13C3 HFPO-DA	*105*		*50 - 200*
13C6 PFDA	*110*		*50 - 200*
13C5 PFHxA	*113*		*50 - 200*
13C4 PFHpA	*115*		*50 - 200*
13C8 PFOA	*115*		*50 - 200*
13C9 PFNA	*109*		*50 - 200*
13C7 PFUnA	*113*		*50 - 200*
13C2 PFDoA	*109*		*50 - 200*
13C4 PFBA	*110*		*50 - 200*
13C5 PFPeA	*111*		*50 - 200*
13C3 PFBS	*109*		*50 - 200*
13C3 PFHxS	*110*		*50 - 200*
13C8 PFOS	*107*		*50 - 200*
13C2-4:2-FTS	*115*		*50 - 200*
13C2-6:2-FTS	*114*		*50 - 200*
13C2-8:2-FTS	*109*		*50 - 200*

Lab Sample ID: 380-246492-C-7-A MS
Matrix: Water
Analysis Batch: 264628

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 264404

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		118	113		ng/L		96	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		118	111		ng/L		94	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		118	108		ng/L		91	70 - 130

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Lab Sample ID: 380-246492-C-7-A MS
Matrix: Water
Analysis Batch: 264628

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 264404

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		118	116		ng/L		98	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		118	111		ng/L		94	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		118	108		ng/L		91	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		118	108		ng/L		92	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		118	119		ng/L		101	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		118	111		ng/L		94	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		118	114		ng/L		97	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		118	119		ng/L		101	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		118	113		ng/L		96	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		118	119		ng/L		101	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		118	117		ng/L		99	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		118	111		ng/L		94	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		118	107		ng/L		90	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		118	111		ng/L		94	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		118	111		ng/L		94	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		118	101		ng/L		86	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0	F1	118	196	E F1	ng/L		166	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		118	106		ng/L		90	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		118	107		ng/L		91	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		118	113		ng/L		96	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		118	111		ng/L		94	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		118	110		ng/L		93	70 - 130

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C3 HFPO-DA	*65*		*50 - 200*
13C6 PFDA	*79*		*50 - 200*
13C5 PFHxA	*73*		*50 - 200*
13C4 PFHpA	*71*		*50 - 200*
13C8 PFOA	*72*		*50 - 200*
13C9 PFNA	*72*		*50 - 200*
13C7 PFUnA	*85*		*50 - 200*
13C2 PFDoA	*101*		*50 - 200*
13C4 PFBA	*71*		*50 - 200*
13C5 PFPeA	*71*		*50 - 200*
13C3 PFBS	*107*		*50 - 200*
13C3 PFHxS	*107*		*50 - 200*
13C8 PFOS	*104*		*50 - 200*

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Lab Sample ID: 380-246492-C-7-A MS
Matrix: Water
Analysis Batch: 264628

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 264404

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C2-4:2-FTS	114		50 - 200
13C2-6:2-FTS	114		50 - 200
13C2-8:2-FTS	113		50 - 200

Lab Sample ID: 380-246492-D-7-A MSD
Matrix: Water
Analysis Batch: 264628

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 264404

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		118	108		ng/L		91	70 - 130	5	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		118	105		ng/L		89	70 - 130	5	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		118	114	*5-	ng/L		97	70 - 130	6	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		118	109	*5-	ng/L		92	70 - 130	7	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		118	109		ng/L		92	70 - 130	2	30
Perfluorodecanoic acid (PFDA)	<2.0		118	99.2	*5-	ng/L		84	70 - 130	8	30
Perfluorododecanoic acid (PFDoA)	<2.0		118	121	*5-	ng/L		102	70 - 130	11	30
Perfluoroheptanoic acid (PFHpA)	<2.0		118	109	*5-	ng/L		92	70 - 130	9	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		118	105		ng/L		89	70 - 130	6	30
Perfluorohexanoic acid (PFHxA)	<2.0		118	105		ng/L		89	70 - 130	9	30
Perfluorononanoic acid (PFNA)	<2.0		118	105	*5-	ng/L		89	70 - 130	12	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		118	112		ng/L		94	70 - 130	2	30
Perfluorooctanoic acid (PFOA)	<2.0		118	106	*5-	ng/L		89	70 - 130	12	30
Perfluoroundecanoic acid (PFUnA)	<2.0		118	114	*5-	ng/L		96	70 - 130	3	30
Perfluorobutanoic acid (PFBA)	<2.0		118	112		ng/L		95	70 - 130	1	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		118	107		ng/L		91	70 - 130	0	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		118	109		ng/L		93	70 - 130	1	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		118	114		ng/L		97	70 - 130	3	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		118	114		ng/L		97	70 - 130	12	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0	F1	118	NaN	E F1	ng/L		0	70 - 130	NC	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		118	108		ng/L		92	70 - 130	2	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		118	107		ng/L		90	70 - 130	1	30
Perfluoropentanoic acid (PFPeA)	<2.0		118	113		ng/L		95	70 - 130	0	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		118	112		ng/L		95	70 - 130	1	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		118	105		ng/L		89	70 - 130	4	30

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C3 HFPO-DA	46	*5-	50 - 200
13C6 PFDA	18	*5-	50 - 200
13C5 PFHxA	50		50 - 200
13C4 PFHpA	46	*5-	50 - 200
13C8 PFOA	41	*5-	50 - 200
13C9 PFNA	33	*5-	50 - 200
13C7 PFUnA	12	*5-	50 - 200
13C2 PFDoA	14	*5-	50 - 200
13C4 PFBA	51		50 - 200
13C5 PFPeA	50		50 - 200
13C3 PFBS	107		50 - 200
13C3 PFHxS	110		50 - 200
13C8 PFOS	106		50 - 200
13C2-4:2-FTS	112		50 - 200
13C2-6:2-FTS	112		50 - 200
13C2-8:2-FTS	117		50 - 200

Method: EPA 537.1 V2 - EPA 537.1 Ver. 2.0 March 2020

Lab Sample ID: MBL 380-264243/22-A
Matrix: Water
Analysis Batch: 264389

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 264243

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<0.98		2.0		ng/L		11/08/26 10:24	11/09/26 14:55	1
Perfluorooctanesulfonic acid (PFOS)	<0.42		2.0		ng/L		11/08/26 10:24	11/09/26 14:55	1
Perfluoroundecanoic acid (PFUnA)	<0.41		2.0		ng/L		11/08/26 10:24	11/09/26 14:55	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.57		2.0		ng/L		11/08/26 10:24	11/09/26 14:55	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.41		2.0		ng/L		11/08/26 10:24	11/09/26 14:55	1
Perfluorohexanoic acid (PFHxA)	<0.45		2.0		ng/L		11/08/26 10:24	11/09/26 14:55	1
Perfluorododecanoic acid (PFDoA)	<0.53		2.0		ng/L		11/08/26 10:24	11/09/26 14:55	1
Perfluorooctanoic acid (PFOA)	<0.37		2.0		ng/L		11/08/26 10:24	11/09/26 14:55	1
Perfluorodecanoic acid (PFDA)	<0.30		2.0		ng/L		11/08/26 10:24	11/09/26 14:55	1
Perfluorohexanesulfonic acid (PFHxS)	<0.31		2.0		ng/L		11/08/26 10:24	11/09/26 14:55	1
Perfluorobutanesulfonic acid (PFBS)	<0.36		2.0		ng/L		11/08/26 10:24	11/09/26 14:55	1
Perfluoroheptanoic acid (PFHpA)	<0.38		2.0		ng/L		11/08/26 10:24	11/09/26 14:55	1
Perfluorononanoic acid (PFNA)	<0.39		2.0		ng/L		11/08/26 10:24	11/09/26 14:55	1
Perfluorotetradecanoic acid (PFTA)	<0.53		2.0		ng/L		11/08/26 10:24	11/09/26 14:55	1
Perfluorotridecanoic acid (PFTrDA)	<0.35		2.0		ng/L		11/08/26 10:24	11/09/26 14:55	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.29		2.0		ng/L		11/08/26 10:24	11/09/26 14:55	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.29		2.0		ng/L		11/08/26 10:24	11/09/26 14:55	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.59		2.0		ng/L		11/08/26 10:24	11/09/26 14:55	1

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	105		70 - 130	11/08/26 10:24	11/09/26 14:55	1
13C2 PFHxA	106		70 - 130	11/08/26 10:24	11/09/26 14:55	1
13C2 PFDA	108		70 - 130	11/08/26 10:24	11/09/26 14:55	1

Method: EPA 537.1 V2 - EPA 537.1 Ver. 2.0 March 2020 (Continued)

Lab Sample ID: MBL 380-264243/22-A
Matrix: Water
Analysis Batch: 264389

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 264243

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3-GenX	104		70 - 130	11/08/26 10:24	11/09/26 14:55	1

Lab Sample ID: LCS 380-264243/24-A
Matrix: Water
Analysis Batch: 264389

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 264243

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	49.1	44.7		ng/L		91	70 - 130
Perfluorooctanesulfonic acid (PFOS)	49.1	51.3		ng/L		105	70 - 130
Perfluoroundecanoic acid (PFUnA)	49.1	49.5		ng/L		101	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	49.1	48.0		ng/L		98	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	49.1	46.7		ng/L		95	70 - 130
Perfluorohexanoic acid (PFHxA)	49.1	47.9		ng/L		98	70 - 130
Perfluorododecanoic acid (PFDoA)	49.1	50.2		ng/L		102	70 - 130
Perfluorooctanoic acid (PFOA)	49.1	48.9		ng/L		100	70 - 130
Perfluorodecanoic acid (PFDA)	49.1	49.9		ng/L		102	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	49.1	51.8		ng/L		105	70 - 130
Perfluorobutanesulfonic acid (PFBS)	49.1	50.3		ng/L		103	70 - 130
Perfluoroheptanoic acid (PFHpA)	49.1	47.5		ng/L		97	70 - 130
Perfluorononanoic acid (PFNA)	49.1	49.6		ng/L		101	70 - 130
Perfluorotetradecanoic acid (PFTA)	49.1	44.9		ng/L		91	70 - 130
Perfluorotridecanoic acid (PFTrDA)	49.1	53.0		ng/L		108	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	49.1	52.7		ng/L		107	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	49.1	50.4		ng/L		103	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	49.1	45.6		ng/L		93	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NEtFOSAA	98		70 - 130
13C2 PFHxA	99		70 - 130
13C2 PFDA	105		70 - 130
13C3-GenX	93		70 - 130

Method: EPA 537.1 V2 - EPA 537.1 Ver. 2.0 March 2020 (Continued)

Lab Sample ID: MRL 380-264243/23-A
Matrix: Water
Analysis Batch: 264389

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 264243

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	1.96	1.90	J	ng/L		97	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.96	2.03	J	ng/L		103	50 - 150
Perfluoroundecanoic acid (PFUnA)	1.96	2.05	J	ng/L		104	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	1.96	1.89	J	ng/L		96	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	1.96	2.05	J	ng/L		104	50 - 150
Perfluorohexanoic acid (PFHxA)	1.96	1.98	J	ng/L		101	50 - 150
Perfluorododecanoic acid (PFDoA)	1.96	2.11	J	ng/L		107	50 - 150
Perfluorooctanoic acid (PFOA)	1.96	2.04	J	ng/L		104	50 - 150
Perfluorodecanoic acid (PFDA)	1.96	1.99	J	ng/L		101	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.96	2.13	J	ng/L		109	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.96	2.07	J	ng/L		105	50 - 150
Perfluoroheptanoic acid (PFHpA)	1.96	1.92	J	ng/L		98	50 - 150
Perfluorononanoic acid (PFNA)	1.96	2.13	J	ng/L		108	50 - 150
Perfluorotetradecanoic acid (PFTA)	1.96	1.78	J	ng/L		91	50 - 150
Perfluorotridecanoic acid (PFTrDA)	1.96	2.14	J	ng/L		109	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	1.96	1.99	J	ng/L		101	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.96	2.01	J	ng/L		102	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.96	1.92	J	ng/L		98	50 - 150

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
d5-NEtFOSAA	*101*		*70 - 130*
13C2 PFHxA	*97*		*70 - 130*
13C2 PFDA	*103*		*70 - 130*
13C3-GenX	*94*		*70 - 130*

Lab Sample ID: 380-246832-A-1-B MS
Matrix: Water
Analysis Batch: 264389

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 264243

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		49.3	46.6		ng/L		95	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		49.3	52.7		ng/L		106	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		49.3	50.1		ng/L		102	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		49.3	50.1		ng/L		102	70 - 130

Method: EPA 537.1 V2 - EPA 537.1 Ver. 2.0 March 2020 (Continued)

Lab Sample ID: 380-246832-A-1-B MS
Matrix: Water
Analysis Batch: 264389

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 264243

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		49.3	50.5		ng/L		102	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		49.3	47.3		ng/L		93	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		49.3	49.6		ng/L		101	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		49.3	49.2		ng/L		98	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		49.3	49.4		ng/L		100	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		49.3	52.9		ng/L		106	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		49.3	53.8		ng/L		107	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		49.3	48.0		ng/L		96	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		49.3	49.4		ng/L		100	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		49.3	41.0		ng/L		83	70 - 130
Perfluorotridecanoic acid (PFTrDA)	<2.0		49.3	51.6		ng/L		105	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		49.3	55.4		ng/L		112	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		49.3	52.6		ng/L		107	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		49.3	47.6		ng/L		96	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
d5-NEtFOSAA	*105*		*70 - 130*
13C2 PFHxA	*101*		*70 - 130*
13C2 PFDA	*102*		*70 - 130*
13C3-GenX	*96*		*70 - 130*

Lab Sample ID: 380-246832-A-1-C MSD
Matrix: Water
Analysis Batch: 264389

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 264243

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		49.2	46.4		ng/L		94	70 - 130	1	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		49.2	52.1		ng/L		105	70 - 130	1	30
Perfluoroundecanoic acid (PFUnA)	<2.0		49.2	47.5		ng/L		96	70 - 130	5	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		49.2	50.1		ng/L		102	70 - 130	0	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		49.2	49.9		ng/L		101	70 - 130	1	30
Perfluorohexanoic acid (PFHxA)	<2.0		49.2	49.2		ng/L		97	70 - 130	4	30
Perfluorododecanoic acid (PFDoA)	<2.0		49.2	47.9		ng/L		97	70 - 130	4	30
Perfluorooctanoic acid (PFOA)	<2.0		49.2	48.1		ng/L		97	70 - 130	2	30
Perfluorodecanoic acid (PFDA)	<2.0		49.2	48.3		ng/L		98	70 - 130	2	30

Method: EPA 537.1 V2 - EPA 537.1 Ver. 2.0 March 2020 (Continued)

Lab Sample ID: 380-246832-A-1-C MSD
Matrix: Water
Analysis Batch: 264389

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 264243

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorohexanesulfonic acid (PFHxS)	<2.0		49.2	53.4		ng/L		107	70 - 130	1	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		49.2	53.6		ng/L		107	70 - 130	0	30
Perfluoroheptanoic acid (PFHpA)	<2.0		49.2	46.9		ng/L		94	70 - 130	2	30
Perfluorononanoic acid (PFNA)	<2.0		49.2	48.1		ng/L		98	70 - 130	3	30
Perfluorotetradecanoic acid (PFTA)	<2.0		49.2	36.3		ng/L		74	70 - 130	12	30
Perfluorotridecanoic acid (PFTrDA)	<2.0		49.2	49.9		ng/L		101	70 - 130	3	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		49.2	52.8		ng/L		107	70 - 130	5	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		49.2	52.6		ng/L		107	70 - 130	0	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		49.2	48.1		ng/L		98	70 - 130	1	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
d5-NEtFOSAA	*100*		*70 - 130*
13C2 PFHxA	*100*		*70 - 130*
13C2 PFDA	*99*		*70 - 130*
13C3-GenX	*99*		*70 - 130*

QC Association Summary

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-246827-1
SDG: PFAS: Halawa Shaft Viewing Pool

LCMS

Prep Batch: 264243

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-246827-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1 DW	
380-246827-2	FB HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1 DW	
MBL 380-264243/22-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-264243/24-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-264243/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-246832-A-1-B MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-246832-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Analysis Batch: 264389

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-246827-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	EPA 537.1 V2	264243
380-246827-2	FB HALAWA SHAFT VIEWING POOL	Total/NA	Water	EPA 537.1 V2	264243
MBL 380-264243/22-A	Method Blank	Total/NA	Water	EPA 537.1 V2	264243
LCS 380-264243/24-A	Lab Control Sample	Total/NA	Water	EPA 537.1 V2	264243
MRL 380-264243/23-A	Lab Control Sample	Total/NA	Water	EPA 537.1 V2	264243
380-246832-A-1-B MS	Matrix Spike	Total/NA	Water	EPA 537.1 V2	264243
380-246832-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	EPA 537.1 V2	264243

Prep Batch: 264404

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-246827-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	
380-246827-2	FB HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	
MBL 380-264404/20-A	Method Blank	Total/NA	Water	533	
LCS 380-264404/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-264404/21-A	Lab Control Sample	Total/NA	Water	533	
380-246492-C-7-A MS	Matrix Spike	Total/NA	Water	533	
380-246492-D-7-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 264628

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-246827-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	264404
380-246827-2	FB HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	264404
MBL 380-264404/20-A	Method Blank	Total/NA	Water	533	264404
LCS 380-264404/22-A	Lab Control Sample	Total/NA	Water	533	264404
MRL 380-264404/21-A	Lab Control Sample	Total/NA	Water	533	264404
380-246492-C-7-A MS	Matrix Spike	Total/NA	Water	533	264404
380-246492-D-7-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	264404

Lab Chronicle

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-246827-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-246827-1

Date Collected: 11/04/26 10:30
Matrix: Water
Date Received: 11/06/26 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			264404	E2HD	EA POM	11/09/26 15:00
Total/NA	Analysis	533		1	264628	Y5FM	EA POM	11/10/26 16:28
Total/NA	Prep	537.1 DW			264243	E9PK	EA POM	11/08/26 10:24
Total/NA	Analysis	EPA 537.1 V2		1	264389	UKDT	EA POM	11/09/26 18:54

Client Sample ID: FB HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-246827-2

Date Collected: 11/04/26 10:30
Matrix: Water
Date Received: 11/06/26 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			264404	E2HD	EA POM	11/09/26 15:00
Total/NA	Analysis	533		1	264628	Y5FM	EA POM	11/10/26 16:37
Total/NA	Prep	537.1 DW			264243	E9PK	EA POM	11/08/26 10:24
Total/NA	Analysis	EPA 537.1 V2		1	264389	UKDT	EA POM	11/09/26 19:04

Laboratory References:

EA POM = Eurofins Pomona, 941 Corporate Center Drive, Pomona, CA 91768-2642, TEL (626)386-1100

Accreditation/Certification Summary

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-246827-1
SDG: PFAS: Halawa Shaft Viewing Pool

Laboratory: Eurofins Pomona

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Hawaii	State	CA00006	01-31-27

Method Summary

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-246827-1
SDG: PFAS: Halawa Shaft Viewing Pool

Method	Method Description	Protocol	Laboratory
533	Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water	EPA	EA POM
EPA 537.1 V2	EPA 537.1 Ver. 2.0 March 2020	EPA	EA POM
533	Extraction of Perfluorinated and Polyfluorinated Alkyl Acids	EPA	EA POM
537.1 DW	Extraction of Perfluorinated Alkyl Acids	EPA	EA POM

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EA POM = Eurofins Pomona, 941 Corporate Center Drive, Pomona, CA 91768-2642, TEL (626)386-1100

Sample Summary

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-246827-1
SDG: PFAS: Halawa Shaft Viewing Pool

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
380-246827-1	HALAWA SHAFT VIEWING POOL	Water	11/04/26 10:30	11/06/26 10:15	Hawaii
380-246827-2	FB HALAWA SHAFT VIEWING POOL	Water	11/04/26 10:30	11/06/26 10:15	Hawaii

Eurofins Pomona
941 Corporate Center Drive
Pomona, CA 91768-2642
Phone (626) 386-1100

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: Kai Edison	Lab PM: Lopez, Maria	Carrier Tracking No(s):	COC No:
Client Contact: Kirk Iwamoto	Phone: +1 808 748 5840	E-Mail: Maria.Lopez@et.eurofinsus.com	State of Origin:	Page: Page 1 of 1
Company: City & County of Honolulu	PWSID:			Job #:
Address: 630 South Beretania Street, Chemistry Lab	Due Date Requested:			
City: Honolulu	TAT Requested (days): RUSH			
State, Zip: HI, 96843	Compliance Project: Δ No			
Phone: 808-748-5840 (tel)	PO #: C20525101 exp 05312023			
Email: kiwamoto@hbws.org	WO #:			
Project Name: RED-HILL/HBWS sites Event Desc RUSH Weekly Red Hill	Project #: 38001111			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A HCL	M Hexane		
B NaOH	N None		
C Zn Acetate	O AsNaO2		
D Nitric Acid	P Na2O4S		
E NaHSO4	Q Na2SO3		
F MeOH	R Na2S2O3		
G Amchlor	S H2SO4		
H Ascorbic Acid	T TSP Dodecahydrate		
I Ice	U Acetone		
J DI Water	V MCAA		
K EDTA	W pH 4-5		
L EDA	Y Trizma		
	Z other (specify)		

Other: NH4 Acetate

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	537.1_DW_PREC - 537.1 Full List	533 - All Analytes	Total Number of containers	Special Instructions/Note:
			Preservation Code:				Y	Z		
HALAWA SHAFT VIEWING POOL	4-Nov-2026	10:30	G	Water			3	3		
FB HALAWA SHAFT VIEWING POOL	4-Nov-2026	10:30	G	Water			1	1		

380-246827 COC

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested I, II, III, IV, Other (specify)

Special Instructions/QC Requirements

Empty Kit Relinquished by	Date	Time	Method of Shipment: FedX

	Date/Time	Company	Received by	Date/Time	Company
Relinquished by: [redacted]	11/5/26 12:00	HBWS	Mailterruption	11/6/26 1015	EAP
Relinquished by:	Date/Time:	Company	Received by:	Date/Time	Company
Relinquished by:	Date/Time	Company	Received by:	Date/Time	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks: (631A) 3.0+0.1 3.1 961-FROZEN

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-246827-1
SDG Number: PFAS: Halawa Shaft Viewing Pool

Login Number: 246827
List Number: 1
Creator: Ngo, Theodore

List Source: Eurofins Pomona

Question	Answer	Comment
The coolers custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
Samples were received on ice.	True	
Cooler(s) Temperature is acceptable.	True	
Cooler(s) Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and is legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
ClO4 headspace requirement met (>50% for CA, >30% for other states).	N/A	
Samples do not require splitting or compositing.	True	
Container provided by EEA	True	